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(54) Digital copyright management system using electronic watermark

(57) A system for managing a digital content, particularly a digital content to which a copyright is claimed, and a system for supplying a public-key which is used in the management of the digital content are provided. The digital content management program is embedded to an operating system of a user apparatus as a micro-kernel, a watch program or a watch command which is linked to the digital content management program is transmitted to the user apparatus by using a network or data broadcasting, and thereby, the illegitimate usage of the digital content is watched. A visible watermark is added to the digital content when illegitimately utilized, to restrain later usage. Even in regular usage, the route of copying or transferring the digital content can also be ascertained by adding an invisible watermark. Further, a public-key is put in a public-key distribution screen to be distributed by the network or broadcasting. Image data to which information on owner of the public-key or on the user is added as an invisible electronic watermark, is entered to the public-key distribution screen, so that the authenticity of the public-key and the user is checked by the electronic watermark.

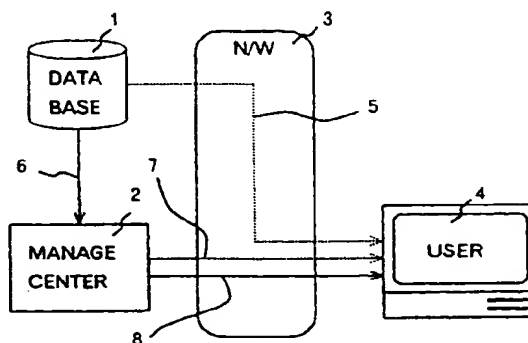


Fig. 2

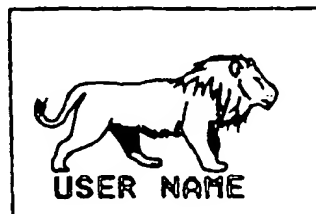


Fig.4B

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EUROPEAN SEARCH REPORT

Application Number
EP 98 11 0563

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	WO 96 27259 A (HIGHWATER FBI LIMITED :HILTON DAVID (GB)) 6 September 1996 * page 1, paragraph 1 * * page 6, paragraph 1 - page 8, paragraph 1 * * claim 9 *	5-10	G06F1/00 G06F9/46 H04N1/32 H04L9/08
Y	KOMATSU N ET AL: "A PROPOSAL ON DIGITAL WATERMARK IN DOCUMENT IMAGE COMMUNICATION AND ITS APPLICATION TO REALIZING A SIGNATURE" ELECTRONICS & COMMUNICATIONS IN JAPAN, PART I - COMMUNICATIONS, vol. 73, no. 5, PART I, 1 May 1990, pages 22-33, XP000159282 * page 22, left-hand column, paragraph 1 - page 25, right-hand column, last paragraph *	5-10	
A		1-4	
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18 February 1999	Examiner Powell, D
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03 02 (PatCat)



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EUROPEAN SEARCH REPORT

Application Number
EP 98 11 0563

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
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			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18 February 1999	Examiner Powell, D
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P01C01)



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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-4

Data access control by scheduling a usage watchdog program

2. Claims: 5-10

Data access control by cryptographic key distribution

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 98 11 0563

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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18-02-1999

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82